

## CLAIMS

What is claimed is:

1. An impregnation compound for a fabric product comprising:  
a pre-polymer;  
5 a co-reactant curative; and  
a diluent, said diluent solvating the mixture of said pre-polymer and said curative, and wherein said impregnation compound has a curative stoichiometry range of less than 85 percent.

10 2. The impregnation compound of claim 1 wherein said impregnation compound has a curative stoichiometry range of approximately 75 percent.

3. The impregnation compound of claim 1 wherein said pre-polymer comprises an amount of 100.0 parts by weight.

15 4. The impregnation compound of claim 1 wherein said co-reactant curative comprises an amount of 26.1 parts by weight.

5. The impregnation compound of claim 1 wherein pre-polymer comprises a  
20 urethane pre-polymer.

6. The impregnation compound of claim 1 wherein said diluent comprises a solvent.

25 7. The impregnation compound of claim 1 wherein the ratio of said curative to said pre-polymer is derived from the formula

$$\frac{6.34 \times 0.75 \times 230}{42} = \text{parts by weight of curative per 100 parts of pre-polymer}$$

where 6.34 is the isocyanate content of the pre-polymer, 0.75 is the desired stoichiometry, 230 is the equivalent weight of the curative and 42 is the equivalent weight  
30 of the isocyanate.

8. A method of impregnating a fabric with an impregnation compound comprising:

5       impregnating the fabric with the impregnation compound;  
      driving the compound into the fabric fibers;  
      removing excess compound; and  
      drying said fabric.

9. The method of claim 8 further comprising scouring the fabric before said  
10   impregnating.

10. The method of claim 8 further comprising treating the fabric before said  
impregnating.

15   11. The method of claim 8 wherein said treating the fabric comprises treating the  
fabric with a polymeric isocyanate to enhance linkage of the impregnation compound to  
the fabric.

12. The method of claim 8 wherein said impregnating comprises submersing said  
20   fabric in a tank of the impregnation compound.

13. The method of claim 8 wherein said driving the compound into fabric fibers  
comprises running said fabric through a set of rollers.

25   14. The method of claim 8 wherein said drying is done in an oven having a  
temperature sufficient to remove a diluent from said impregnating compound.

15. The method of claim 8 wherein said impregnation compound comprises:  
a pre-polymer;  
30       a co-reactant curative; and

a diluent, said diluent solvating the mixture of said pre-polymer and said curative, and wherein said impregnation compound has a curative stoichiometry range of less than 85 percent.

5 16. The method of claim 15 wherein said impregnation compound has a curative stoichiometry range of approximately 75 percent.

17. The method of claim 15 wherein said impregnation compound has a ratio of said curative to said pre-polymer according to the formula

10 
$$\frac{6.34 \times 0.75 \times 230}{42} = \text{parts by weight of curative per 100 parts of pre-polymer}$$

where 6.34 is the isocyanate content of the pre-polymer, 0.75 is the desired stoichiometry, 230 is the equivalent weight of the curative and 42 is the equivalent weight of the isocyanate.

15 18. A fabric product comprising at least one resin fabric piece, said resin fabric piece comprising:

a resin impregnated fabric layer;

a first resin layer disposed on a first side of said resin impregnated fabric layer;

and

20 a second resin layer disposed on a second side of said resin impregnated fabric layer.

19. The fabric product of claim 18 wherein resin comprises:

a pre-polymer;

25 a co-reactant curative; and

a diluent, said diluent solvating the mixture of said pre-polymer and said curative, and wherein said impregnation compound has a curative stoichiometry range of less than 85 percent.

20. The fabric product of claim 19 wherein said resin has a curative stoichiometry range of approximately 75 percent.

21. The fabric product of claim 19 wherein said resin has a ratio of said curative  
5 to said pre-polymer in accordance with the formula

$$\frac{6.34 \times 0.75 \times 230}{42} = \text{parts by weight of curative per 100 parts of pre-polymer}$$

where 6.34 is the isocyanate content of the pre-polymer, 0.75 is the desired stoichiometry, 230 is the equivalent weight of the curative and 42 is the equivalent weight of the isocyanate.

10

22. The fabric product of claim 18 further comprising a second resin fabric piece disposed along a surface of said second resin layer.